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DESERTIFICATION

the UNESCO Courier

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DESERTIFICATION

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In the 1950s, scientists thought that technology could green the world's deserts. Today, technological optimism has been replaced by realism and concern. On the occasion of an international conference on the future of drylands to be held in Tunis on 19-21 June 2006, this edition of *the UNESCO Courier* is dedicated to the topic of desertification.

TURNING BACK THE SANDS OF TIME?

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Desertification - Dogon Country (Mali).

In the 1950s, a sense of great optimism prevailed that we could green the world's deserts. It was believed that techniques such as cloud seeding using silver-iodide could bring rainfall to dry areas, improved irrigation techniques could boost agricultural production in the drylands, and selective breeding could create livestock less dependent on water. In short, we thought that poverty in the world's drylands could be reduced through technology.

Half a century later, technological optimism has been replaced by realism and concern. The belief that we can control our climate has given way to concerns about human impact on the environment, in particular global warming.

Current climate scenarios predict that the driest regions of the world will become even drier. The availability of freshwater, the most precious resource in drylands, is reaching critical quality threshold levels, even in temperate zones. Despite technological advances in genetic modification of organisms to be drought and pest resistant, dryland countries are still among the poorest in the world.

The last fifty years have shown us that the ecological and socio-economic situation in drylands is not a simple equation governed by factors such as climate, soil, water and vegetation. Market speculation and enormous price fluctuations in commodities such as cotton can affect the income of a rural farmer in a remote village in Mali, in the same way that droughts or floods will affect his or her harvest.

From realism to hope

Despite these challenges, there is hope for drylands. The world has recognized the degradation of drylands by proclaiming 2006 the International Year of Deserts and Desertification. Also, in 1996, the UN Convention to Combat Desertification (UNCCD) was adopted "to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, in particular in Africa."

Drylands were at the centre of UNESCO's earliest efforts at international scientific cooperation in the study of natural resources. In 1951, the Organization launched its first international research programme dealing with arid zones. Today, UNESCO

2006:
International Year of Deserts and Desertification

1996:
UN Convention to Combat Desertification (UNCCD)

programmes, such as the Programme on Man and the Biosphere (MAB), and the International Hydrological Programme (IHP) continue to innovate. Both programmes run dryland research projects worldwide, such as at the Omayed Biosphere Reserve in Egypt which provides clean drinking water to Bedouins using solar power.

Bringing children and teachers onboard

To help future generations to combat desertification, a wealth of existing scientific knowledge has been transformed into educational tools for primary schools. The "Education Kit on Combating Desertification" informs students and teachers alike on the problems of drylands, and gives examples of simple measures everyone can take. This kit has now been translated into Arabic, Chinese, English, French, German, Hindi, Mongol, Russian and Spanish.

The MAB Programme is currently developing a new teaching resource kit for dryland countries to stimulate students' creativity in environmental education.

The Future of Drylands Conference, to be held in Tunis in June 2006, will review the current state-of-knowledge of dryland ecosystems and the socio-economics of dryland development in order to provide scientific and technical advice to decision-makers. It also aims to define future paths of research into drylands, specially promoting application-oriented science for the sustainable development of dryland regions.

This conference marks 50 years of dryland research in the UN System: let us be optimistic again on the future of drylands by fostering global partnerships for development in line with the Millennium Development Goals.

Thomas Schaaf

Mediterranean island landscapes have experienced deforestation and desertification since classical times. Today, rising tourism and farming increasingly deplete groundwater resources and threaten to accelerate desertification.

MYRTLE AND BROOM
THE REAL MEDITERRANEAN LANDSCAPE?

To the hundreds of thousands of north European tourists who visit the Mediterranean every year, the carob groves and scrubland that surround many an ancient site are the region's archetypal scenery.

But a visit to a natural history museum will reveal that that this landscape is not the one that ancients saw. Until Classical times, the sea's larger islands had thickly forested mountainous interiors that once harboured elephants and rhinoceroses.

The low-growth scrubs of myrtle and broom or aromatic herbs we today think of as typically Mediterranean are largely the result of man's activity in chopping down primeval forests for agriculture, fuel or building homes and ships.

But the process does not stop there -- further erosion of the soil can create barren steppeland where only thistle and asphodel, symbol of the underworld to the ancients, survive.

At the far eastern end of the Mediterranean, the resort island of Cyprus has retained one of the region's most diverse fauna and flora, with its relative isolation giving it one of Europe's highest numbers of endemic species.

But each spring southerly winds from nearby Africa dump Saharan sand from Egypt and Libya in a reminder of the fragility of the island's ecosystems.

©Charlie Onians

Agricultural land in Cyprus struggles against a combination of irregular rainfall and year-long sunshine.

Myrtle and broom are not "typically Mediterranean." This landscape resulted when primeval forests were chopped down for agriculture, fuel and building homes and ships.

In 2000, Cyprus ratified the UN Convention to Combat Desertification. Two years later, it submitted its first report, which identified the principal threats as climate change, soil erosion, overuse of water and the impact of man.

A changing environment

Analysis of weather data from the past century suggests the island is growing hotter by up to 0.01 degrees centigrade per year and growing drier by about one millimetre per year in precipitation. And it is growing drier from a low base. Although the island as a whole averages around 480 millimetres of rain or snow per year, large parts receive less than 200 millimetres.

The southern foothills of the main Troodos mountain range and the Mesaoria plain between the capital Nicosia and the eastern city of Famagusta are the worst affected and among the most prone to desertification.

Existing water supply is also being used ever more plentifully as the island's agriculture becomes more intensive.

"Overexploitation of (groundwater) usually results in sea intrusion and destruction of the aquifers thus adding to the desertification problem," the government report acknowledges.

The island's small Green Party, which forms part of the governing coalition, has been particularly active on the issue, pressing for more research into a problem that threatens not only the island's natural environment but also much of its tourism potential.

"An affiliated scientific organization is working on a scientific basis to document the level of desertification in Cyprus," said the party's environment spokesman Costas Papastavros.

"We need to understand more about the parameters of the problem. The landscape issue is a very hot issue for the tourism industry as well."

Sustainable water management

The conservation group Birdlife Cyprus also conducts research. But for its director Martin Hellicar, the key is sustainable agriculture.

"It boils down to water management. Agriculture in Cyprus over the past 20 or 30 years has become more and more water-hungry," Hellicar explains. "The question is: Is this sustainable?"

"What is happening is that the areas that are intensively farmed are becoming more intensively farmed," he says. "More marginal farms in upland areas are being abandoned. This is not what you want."

Artemis Yiordanli heads environmental group Terra Cypria, which has been active trying to reverse the exodus of young people from marginal rural communities through the introduction of sustainable development concepts like agro-tourism.

"Deforestation in the 20th or 21st century is man-made," she says. "More lands are being abandoned from agriculture. Some return to forest if they are high enough, some go to low-growth, especially when you have overgrazing. The implication for biodiversity is obvious."

Since the 1980s the government has been engaged in afforestation of some land in extreme condition. By 2001, 4,300 hectares had been afforested under the programme and another 10,000 hectares are planned over the current decade.

But the issue is a complex one, and the scheme is not without its critics.

"Reforestation needs to be appropriate," says Hellicar. "It is not always necessarily a good thing to have trees. Bird species like the lark or stone curlew, which are of European importance, are dependent on drier, more open landscapes."

"Deforestation in the 20th or 21st century is man-made."

Artemis Yiordanli,
environmental group leader.

©Charlie Onians

Sand encroaches on agricultural fields south of the Cyprus capital Nicosia, more than 30 kilometres from the beach.

Steve Kirby

Despite a ban on logging and cutting down trees, increased use of charcoal contributes to desertification in Kenya. New legislation and environmental activism aim to fight this trend which threatens to turn the country into a desert.

FIGHTING DESERTIFICATION IN KENYA
ONE TREE AT A TIME

© Bosire Bogonko

A temporary storage facility in northern Wajir district, a region where the effects of desertification are widely felt.

Dishevelled, soiled and covered in black soot, Dismus Njuguna hawks charcoal in the scorching sun on the roadside of Nairobi's South B residential district. He says business is thriving now that the country has begun recovering from a severe drought.

He collects about 500 shillings (about seven dollars) a day, a considerable sum in a country where more than 60 percent of people survive on under one dollar a day, before returning home to the nearby Mukuru slums.

Njuguna is among around 30 others on the same road, and thousands across the country, scrambling to meet customer demand. Since rains resumed in Kenya after a prolonged drought, rising costs of fuel have contributed to the rise in demand for charcoal.

"We are forced to buy charcoal because we cannot afford fuel or electricity," said Maria Kimuta, a primary school teacher. Nearby a row of women frying fish and pancakes on the roadside say they need a steady flow of charcoal - mostly from indigenous hard wood - to stay in business.

"We are used to this charcoal since it is efficient when cooking on the wayside," said Mary Nyagothi, a fish monger in Nairob's Gikomba Open air market.

Experts say increased use of charcoal over the years in Kenya has increased deforestation in several parts of the country, mostly in the Mau Forest, which acts as the main water catchment area in the east African nation.

> "I request every Kenyan to plant a tree so that we can make afforestation in Kenya a success".
>
> **Alfred Mutua**

Activism and legislation

In addition to banning logging, government officials have outlawed the cutting down of trees, warning of an increasing desertification across the country.

"The situation is very bad and we must all work to change this habit of recklessly cutting trees. I request

"The continent's growing population is often forced to migrate in order to find water"
.

© Bosire Bogonko

A Kenyan Turkana woman drawing water from a deep well in northern Kenya.

© Bosire Bogonko

In Nairobi as in the rest of Kenya, charcoal is the most commonly-used fuel.

every Kenyan to plant a tree so that we can make afforestation in Kenya a success," Kenyan government spokesman Alfred Mutua said.

Mutua said deforestation has increased the effects of drought, which has affected around 15 million people in east Africa, of which eight million of them are in dire need of relief supplies. In Kenya alone, some 3.5 million need food aid.

Environmental activists like 2005 Nobel Peach Prize winner Wangari Maathai are concerned that rampant tree cutting will alter rain patterns and expand deserts. Rapid desertification in Africa "is a result of deforestation, devegetation, especially due to poor farming practices and soil erosion that made riverbeds red-brown," Maathai said in Nairobi.

Alarmed by years of forest mismanagement, Maathai lobbied several lawmakers to pass a forest law last year that, if effectively implemented, will go a long way to protect Kenyan forests. After a near 10-year delay, the Kenyan parliament approved The Forest Bill 2005. The bill replaces a law adopted during British colonial rule of Kenya in 1947 that has failed to protect the country's forests.

Since independence in 1963, Kenya's forest cover has shrunk from 10 percent of its 582,650 square-kilometre (224,962-square-mile) territory to a mere 1.7 percent, according to environmentalists who campaigned for the new law.

Migration contributes to desertification

"The continent's growing population is often forced to migrate in order to find water".

According to regional environmental experts, more than two-thirds of Africa is either arid, semi arid or just plain dry lands. The continent's growing population is often forced to migrate in order to find water and grazing lands for their livestock.

"This migration, usually with their livestock concentrated in one area, usually ruins the environment and contributes to expansion of deserts and to some extent climate change," said an environmentalist who had done studies in parts of east Africa.

The Worldwide Fund for Nature has warned that Africa is losing two million hectares (five million acres) of forest every five years, moving the continent closer to becoming one huge desert.

Bosire Bogonko

Scientists working in Egypt learn a valuable lesson: if they are to involve local villagers in dryland conservation projects, they must first propose a solution to the community's drinking water shortage.

HARNESSING THE SUN'S ENERGY TO MAKE DRINKING WATER

© B. Salem

Final Layout of the solar systems in Omayed Site.

The first meeting took place in a crowded Bedouin tent. We, the scientists working for the SUMAMAD (Sustainable Management of Marginal Drylands) project in Egypt, were there to assess the needs of the Bedouin community, the desert people who live in the Omayed Biosphere Reserve, and to offer our help.

Initially, our intention was to advise this impoverished population against overgrazing and uprooting the sparse local vegetation. We thought we would work with them on several rotational grazing regimes and dry farming to improve their livelihoods in a sustainable way. In the process we would gain some of their traditional knowledge on coping with drought.

They had a different idea. One youth said immediately "We will take your advice, give you facilities, but give us drinking water first!"

"Water for us is like gold, very precious and hard to find," another Bedouin continued. "The water in our wells is very salty. We get our fresh water from trucks and travel a long way to get it."

"We walk ten km carrying buckets on our heads. Our population is growing, and so is our need for water," an old woman with a face full of wrinkles joined in. "You civilized people, help us. We need water, not T-shirts with 'protect the environment' written on them!"

We could only agree that the Bedouins faced a critical situation. Omayed Biosphere Reserve (OBR) is part of Egypt's Western Coastal Desert, located on its Mediterranean coastal edge, an area rich in natural resources.

Groundwater, a scarcity

Water resources, however, are scarce and variable. Groundwater in the Omayed Biosphere Reserve comes from the Moghra and Wadi El Natrun Aquifers, which are saline due

"Water for us is like gold, very precious and hard to find."

© B. Salem

Delivery of water to households at Omayed Biosphere Reserve.

to over-extraction and infiltration.

In the four villages that OBR covers, with a population of about 12,000, there is not enough fresh water for irrigation, livestock and domestic needs, so many people use the salty and environmentally-damaging well water. Many travel far and pay high prices for drinking water delivered by trucks. Contaminated by storage in corroded tanks and open cisterns, it can cause serious intestinal diseases.

At the meeting, the challenge to SUMAMAD was clear. If we wanted to involve OBR villagers in our dryland conservation projects, we had to propose a solution to their clean water shortage: a desalination process for well water. Although large-scale desalination technologies have been used in Egypt for many years, they have not yet become widely available in a form that would fit the needs of the Bedouins.

For the process to be sustainable in the OBR, water must be pumped in amounts permitting its natural replenishment. The technique must be simple, clean, environmentally friendly and compatible with local culture, and it must use minimum energy, fit the natural conditions and require minimum maintenance.

Fortunately, the solution already exists: a small-scale, solar-powered desalination system invented by a German scientist that meets all the above criteria.

With the community's strong support, a pilot project was established in the OBR village of Awlad Gebreel. Inhabitants helped in every way they could, donating 150 square meters of land including a salt water well for the installation of the desalination units, a small building and a pump.

A solution that works

The system is now operating. Gravity causes raw water to run from the tank to four distillation units that separate salt from water using solar energy. About 100-120 litres of distillate are produced per day depending on the amount of sunlight. Even on cloudy days, there is enough to provide five families - 40 to 50 people - with drinking water. The process also produces salt crystals that can be used for tanning leather.

To further the project's participatory aim, we held an open day with a workshop in the community meeting hall and later at the site. We explained at length how the system works and stressed the importance of hygienic conditions for the pump and freshwater tank. We also organized a special course for members of the community who will be responsible for the plant's maintenance.

The Bedouin community showed great appreciation. The women were especially happy that their children could now have clean water. They even expressed their feelings in songs, singing that "the dream of having water flowing easily has come true."

What you need:
150 sq meters of land
1 salt water well
1 pump
4 distillation units

How it works:
Gravity causes raw water to run from the tank to distillation units that separate salt from water using solar energy.

Output:
100-120 liters of drinking water per day.

Dr Boshra Salem,
Assistant Professor, Department of Environmental Sciences, Faculty of Science, University of Alexandria - Egypt.

Andreas Schneider,
Managing Director, Clear water Solutions, Switzerland – Egypt.

Increased farming and rising global temperatures are expanding the Gobi Desert in China. Are tree planting initiatives enough to return wildlife and vegetation to the region?

CHINA'S SEASON OF DUST

©Victoria Hamilton

Trees in the desert, which was once a town (inhabited in the 1960s and 70s).

This year, on 16-17 April, a single dust storm dumped nearly 300,000 tons of sand on Beijing before moving on to Korea and Japan. Sentinels of desertification, the storms have come to be known as the "fifth season" or dust season.

Desertification in China's most famous desert, the Gobi, has been in progress since before the 1950s, but it was from this point on that the desert's expansion accelerated into full force. According to China's Environmental Protection Agency, during a three year period in the mid-nineties, the desert had expanded by 52, 400 square kilometers. And with the Olympic Games coming up in 2008, the Gobi Desert creeps nearer to the capital at a rate of 3km per year. Today, it lurks just 160km outside Beijing.

Planting trees to reclaim the desert

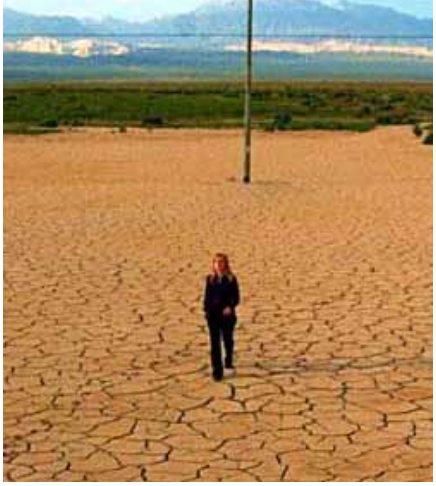
Beginning in 1978, a huge "greening" campaign was waged to combat desertification. In the 1980s, a tree planting initative was organized for the protection and management of forest resources culminating with the creation of National Tree Planting Day. On 12 March each year, people from all walks of life plant trees around the north regions of the country in the worst hit areas.

In the late 1970s global warming became a hot topic in China as average annual temperatures began to rise by 0.5 – 2.0 degrees Celsius, causing the surface soil to become especially dry.

Deserts throughout different climates have always expanded and – when cool enough precipitation is available – reduced back to their original size. But if the climate does not get any cooler, problems begin to arise.

The dramatic rise in temperature and sparse vegetation cover of

Average annual temperatures have been rising 0.5 – 2.0 degrees Celsius since the 1970s.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Over 40% of its territory encompassed within the Gobi Desert, makes desertification here a huge environmental concern.

Mongolia, with over 40% of its territory encompassed within the Gobi Desert, makes desertification here a huge environmental concern. It has been estimated that around 80% of its total territory is under serious threat of desertification. With inadequate livestock water supplies and poor pasture utilization, due to both a population and domestic animal increase, it seems humans are chiefly to blame for what has already happened, and what will happen in years to come.

Reasons for hope

It seems that some reforestation projects are bearing fruit, such as efforts being made in the Maowusu Desert, located between the southern Inner Mongolia Autonomous Region and northern Shaanxi. Forty years ago, the desert was just 500 meters away from the city of Yulin; as of June 2005, it stands over 50km away according to Yao Zhongxin of the Shaanxi Provincial Forestry Bureau. The area of desert in Shaanxi has been pushed back 275,000 hectares since 1999. That is a marvelous feat and something Beijing should strive towards.

The problem of displacement is also a concern in the Gobi. With the desert growing anywhere from 2,000-10,000 square kilometers per year, the resulting number of refugees is on the rise. Chinese scientists report that there are now desert refugees in three provinces–Inner Mongolia, Ningxia and Gansu. In Gansu province alone there are around 4,000 villages that face abandonment. Over the next decade, 180,000 residents living close to Beijing will need to relocate as well due to all the measures that will be put in place to decrease desertification gaining in on the capital.

Today, tourists in the Gobi are told of times past when "instead of a lifeless, flat expanse of hot, arid land, the area was rich with wildlife and vegetation, inhabited by camel breeding families." This reminds us that the deserts are not some wild force out of our control fighting for survival, but indeed fragile eco-systems needing proper care and attention. Attention that is desperately lacking.

Victoria Hamilton
in Beijing

Every year desertification gains ground in developing countries. We may be able to reverse these effects if we act quickly says Professor Charles Hutchinson, Director for the Office of Arid Lands Studies at Arizona University (USA), a regular collaborator to UNESCO.

ARE HUMAN BEINGS TO BLAME FOR DESERTIFICATION?

Interview by Donatienne de San

We generally associate the idea of deserts with that of desertification. What's the difference between these two concepts?

Deserts are a natural feature of the Earth's climate. The great subtropical deserts include: the Sahara, the Gobi in central Asia and the Takla Makan in western China. Some argue that desertification is not possible in deserts, outside of oases, because they are largely

© UNESCO/Nantet, Bernard

Cracked land.

© UNESCO

Professor Charles Hutchinson.

devoid of plant and animal life. Instead, they say that desertification is found more commonly in adjacent semiarid and sub-humid areas, and is largely caused by human activity.

Droughts aren't the only cause of desertification. What are some others?

Semi-arid areas are relatively dry, but their main feature is their extreme variability in rainfall from year to year and also from place to place. It is variability, a period of good years followed by a bad stretch that often leads to problems such as desertification or a decline in land productivity. In good rainfall years, pastoralists or ranchers may add animals to their herds. Similarly, farmers who rely on rainfall may begin to cultivate areas that were marginal farmlands. When droughts return larger herds will exert damaging pressure on rangeland vegetation. Farmers' crops in marginal fields will fail. Both situations will deplete the soil and expose it to erosion.

Climate variability is one cause, but so is population pressure to bring new lands into production, or government policies that encourage the development of marginal lands.

Also, certain governments try to raise exports by encouraging farmers to cultivate commercial goods such as peanuts or cotton, which are less adapted to the climate than the indigenous products they replace.

How are desertification and poverty linked?

Poverty generally occurs when rural populations have no alternatives to making a living. However, people are resilient, and they are able to find alternatives, often outside of their immediate area.

It has been suggested that the increasing movement from rural to urban areas -at least by some family members- has provided new sources of income to local households and reduced some of the pressure on rural lands in many parts of the world. However, these migrations also affect household and community structures because immigrants are usually young males who are the main part of local labor forces.

Is desertification a phenomenon specific to developing countries?

There are, or have been, problems of declining productivity in most of the world's drylands, even in developed countries. However, the factors that make some areas more "drought proof" than others, such as strong governance, vital integrated economies, mature service infrastructure, access to water and other resources are often lacking in developing countries.

Is desertification a reversible process?

At one point in time, the answer was, "yes.... if you have enough money." Now, it might still be a tentative yes, but one highly dependent on local conditions -- climatic, ecological, economic and social. There are reports of improving conditions without massive infusions of money, particularly in the Sahel region. Here, local communities have come together to construct low-technology water control structures from local materials (i.e., earth and rocks) to minimize runoff and promote rainfall infiltration.

These are hopeful and, again, point to the resilience of many rural economies and communities. However, as things improve there is often a tendency to become complacent and to assume that the problems have been solved for good. During this recent period, climate has been relatively favorable. But, as we know, drought will definitely return. Whether the reported gains can withstand another round of bad years is unclear.

Timeline

Important dates on desertification in UNESCO and the United Nations.

1947
The Director-General of UNESCO suggests that comprehensive international laboratories for the arid zone should be established within the United Nations system.

1948
The 3rd UNESCO General Conference in Beirut (Lebanon) adopts a resolution proposed by India to examine the possibility of an international institute for the arid zone. The Central Arid Zone Research Institute (CAZRR) in Jodhpur (India) is launched with the support of UNESCO in 1959.

1949
A group of experts meets in Paris (France) and recommends the establishment of an international advisory committee.

1951
The Advisory Committee on Arid Zone Research holds its first session in Algiers. Composed of 15 members from different countries, this is the origin of UNESCO's Arid Zone Research Programme.

1957
The research programme is upgraded to a Major Project on Scientific Research on Arid Lands.

1965
The Advisory Committee on Natural Resources Research holds its first session, replacing the earlier committees on arid zones and the humid tropics.

1968
An intergovernmental conference on the "scientific basis for rational use and conservation of the resources of the biosphere" meets in Paris, focusing on all the world's ecosystems.

1971
The international coordinating council of the new Man and the Biosphere (MAB) Programme holds its first meeting.

1973
The UN sets up the Sudano-Sahelian Office to spearhead efforts to reverse the spread of desertification in West Africa. Over 200,000 people died, as well as millions of their animals, in the drought which began in 1968.

1976
In cooperation with the United Nations Environment Programme (UNEP), UNESCO begins a 12-year Integrated Project on Arid Lands (IPAL) in northern Kenya to improve traditional livestock farming systems.

1977
The UN Conference on Desertification meets in Nairobi (Kenya) and adopts an action plan to combat desertification. UNESCO's contribution includes a new map of the world's arid and semi-arid regions.

1980
UNESCO and UNEP initiate a second integrated project on arid lands, this time in southern Tunisia, to update research findings on the region and put them to better use. This project is to last five years. Similar projects follow in the 1980s and 1990s in Lesotho and in various West African countries.

1992
The UN Conference on Environment and Development, also known as the Earth Summit, is held in Rio de Janeiro (Brazil). Its Agenda 21 calls on the General Assembly to preparea legally-binding instrument on the problem of desertification.

1994
The UN Convention to Combat Desertification (UNCCD) is adopted in Paris on 17 June. The same day is proclaimed World Day to Combat Desertification.

1996
The Convention enters into force on 26 December, after 50 ratifications are deposited.

1999
The Convention's permanent secretariat opens its doors in Bonn (Germany).

2001
UNESCO and UNCCD launch the "Education Kit on Combating Desertification" for use in primary schools. The kit now exists in nine languages.

2002
The World Summit on Sustainable Development in Johannesburg (South Africa) calls on the Global Environment Facility to become Convention's financial mechanism.

2004
The comparative research project "Sustainable Management of Marginal Drylands (SUMAMAD)" is launched. Linking eight countries from China to Tunisia, it is sponsored by UNESCO, the United Nations University (UNU), the International Center for Agricultural Research in the Dry Areas (ICARDA) and the Flemish Government of Belgium.

2006
The UN General Assembly proclaims 2006 as the International Year of Deserts and Desertification.

José Banaag

Sources : *United Nations, UNESCO.*

Facts and figures

© Yann Arthus-Bertrand "Earth from Above" / UNESCO

Mali, near Mopti.

Interesting facts and figures on desertification.

Human impact
Desertification directly affects over 250 million people. It threatens the lives of some 1.2 billion people in 110 countries who are among the world's poorest and who depend on land for most of their needs.

Environmentral impact
A third of the Earth's land surface, or over 4 billion hectares, is threatened by desertification.

Drylands
Drylands constitute about 41 per cent of the Earth's surface and support more than 2 billion people; between 10 and 20 per cent of drylands are degraded or unproductive.

Economic loss
Each year, desertification and drought cause an estimated $42 billion in lost agricultural production worldwide. The annual cost of fighting land degradation is estimated at $2.4 billion.

Mass migration
Some 60 million people are expected to eventually move from the deserted areas in sub-Saharan Africa towards northern Africa and Europe from 1997 to 2020.

Arable land
Estimates are that in 2025, there will be considerably less arable land available worldwide than it was in 1990. The decline is expected to be two-thirds in Africa, one-third in Asia and about one-fifth in South America.

Water
In 19 selected countries in the dry zones of Africa and the Far East 1,300 cubic metres of water were available per head in 1990. In 2025, only half of that – 650 cubic metres per head – are expected to be available.

Africa
Two-thirds of the continent is desert or drylands, in a continent where a large percentage of the population is dependent on natural resources for their livelihoods.

Latin America and the Caribbean
One quarter of the region is deserts and drylands.

Northern Hemisphere
Over 30% of the land in the United States is affected by desertification. In Spain, 31% of land is under serious threat.

Endangered species
According to the World Conservation Union, the dama gazelle (Gazella dama) of the Sahara has suffered an 80% decline in numbers over the past 10 years. Asian antelopes face similarly bleak futures due to habitat loss and illegal hunting.

The biosphere
Many desert ecosystems, recognized under UNESCO's Man and the Biosphere Programme, form part of the 482 sites in the World Network of Biosphere Reserves.

World Heritage
Desert cities and natural landscapes are among the 812 inscribed on UNESCO's World Heritage List.

The intangible heritage
The traditions of desert cultures are some of the 90 proclaimed UNESCO Masterpieces of the Oral and Intangible Heritage of Humanity.

The Sahara Project
This project aims to help Member States with the Sahara in common and the region's tourism actors to implement a strategy of cooperation based on the promotion of sustainable tourism.

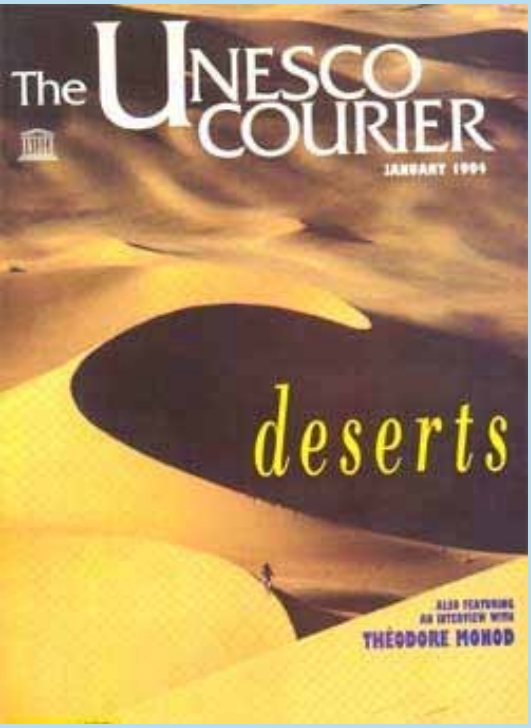
Traditional music
Launched in 1981, this UNESCO CD collection of traditional music, many of them recorded in situ, includes the vocal and instrumental music of desert cultures.

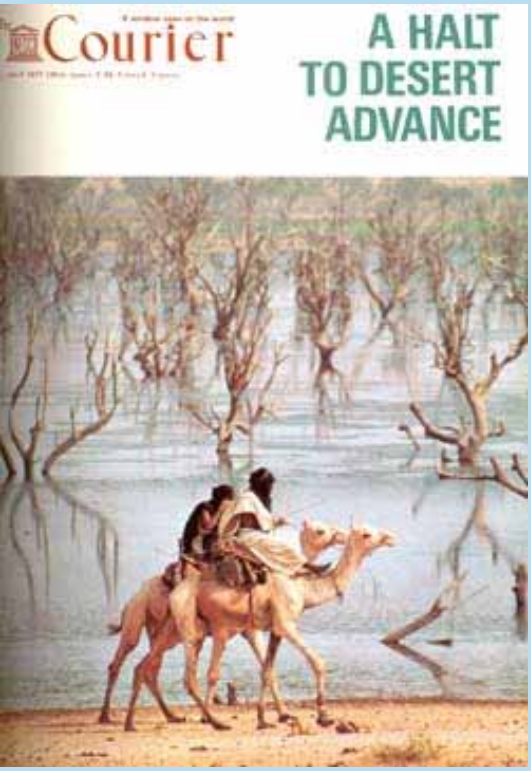
José Banaag

Sources: United Nations, UNESCO, UNCCD, IUCN

The Courier looks back

Since it began publication, the UNESCO Courier has devoted many articles to desertification. It also explored other aspects of the desert environment, for example, as the natural setting of a World Heritage site, or as an inspiring force for the human soul and the artistic spirit. Or even as a challenge to ingenuity. Here is a glimpse at some of them.





Issues

Deserts
January 1994
This issue looks at the many facets of the desert – as a source of inspiration for artistic creation, a place of enlightenment for ascetics and mystics, or a sought-after provider of precious water which challenges man to create master-pieces of hydraulic engineering.

A halt to desert advance
July 1977
What causes deserts to advance? How helpless is man faced with the ravages of desertification? These are only two of the disquieting questions raised in this issue, published on the occasion of the first UN Conference on Desertification in Nairobi (Kenya).

Sahel – land of no return?
April 1975
Years of disastrous drought have left destitute many of the nomad peoples in the Sahel. The fragile balance between man and the environment which enabled these herdsmen to subsist appears to have been destroyed.
The issue examines their tragic plight and uncertain future.

Conquest of the desert
August/September 1955
The mystery of how the camel can go for so long without water has been solved by a UNESCO-sponsored research team in the Sahara. This issue reviews the present status of the campaign to make the desert habitable and extend man's realm to the driest regions of the planet.

Pushing back the desert frontiers
July 1952
The nine scientists in UNESCO's new advisory committee on arid zone research see two major difficulties in the struggle to make arid zones productive: lack of information on what is being done and insufficient research on the international level. UNESCO seeks to fill in this gap.

Articles

"The San : sustainable development before its time"
May 2005
The indigenous San community, in the desert region of the southern Kalahari (South Africa), possess a centuries-old knowledge of water management based on respect of the local ecosystem. Read online.

"Europe's thirsty desert"
October 2003
The Spanish government strongly defends its decision to shift water from the Ebro basin to the parched southern province of Almeria – but environmentalists disagree.

"The world's environment in danger"
May 2002
The impact of human activity on the global environment threatens the survival of the biosphere and future generations.

"The treasures in Mauritania's dunes"
December 2000
Once, Mauritania's ksours were thriving centres of trade and learning. Today, the country is struggling to save them from sand, wind and oblivion.

"Petra's new invaders"
July/August 1999
Petra was declared a world heritage site in 1985. Since then, it's been an uphill battle to protect Jordan's glorious ancient city hewn from pink rock.

"Soils in torment"
January 1999
The earth's thin coat of soil, which helps to feed us and is vital for planetary ecosystems and climatic balance, is becoming increasingly threadbare.

José Banaag

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